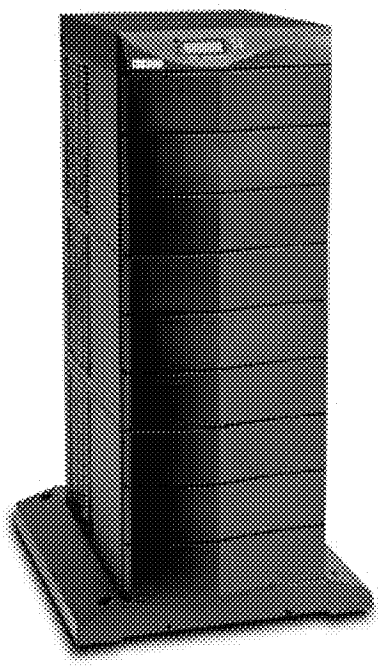
Eaton 9170+ UPS



TAA COMPLIANT

Features

- N+X redundancy for both power and logic eliminates system-level single point-of-failure
- Easily scalable to adapt to changing IT environments by simply adding power and/or battery modules
- True double-conversion design
- ABM® technology significantly increases battery service life
- Universal components fit in any order without affecting UPS operation
- Provides protection against all nine power problems
- Complete offering of power management software included to ensure data integrity
- Provides investment protection with a two-year limited warranty and a $250,000 load protection guarantee (U.S. and Canada)

Product Snapshot

Power Rating:	3–18 kVA
Input Voltage:	200–240 Vac
Output Voltage:	200–240 Vac
Frequency:	50/60 Hz (auto-sensing)
Configuration:	Tower or rackmount

The Eaton® 9170+ UPS is uniquely designed to meet the ever-changing needs of customers with applications such as data centers, networks and call centers. Built for a global audience, the 9170+ is a scalable, modular, flexible solution that combines the highest level of reliability with the lowest cost of ownership in the 3–18 kVA range.

The 9170+ enables customers to build a power solution specific to their needs, with an expandable level of redundancy and increases runtimes through plug-and-play 3 kVA UPS and battery modules. The 9170+ can be configured to fit three-, six-, nine- or twelve-slot enclosures, and is available for tower and rackmount applications. The 9170+ also features a Power Saver mode, a user-selectable feature that increases unit efficiency from 88% in normal operating mode to 97%. With its low initial investment, double-conversion technology, ABM battery management system and high-efficiency Power Saver mode, you never have to compromise reliability for efficiency.

Unique to the 9170+ is its global deployment capability. By using a high-frequency design, housing both logic and power in the power module, and offering a single-cabinet design, distributors and purchasing departments around the world have fewer system components to contend with, regardless of where the

EATON
Powering Business Worldwide

Technical spotlight: Network level N+X redundancy

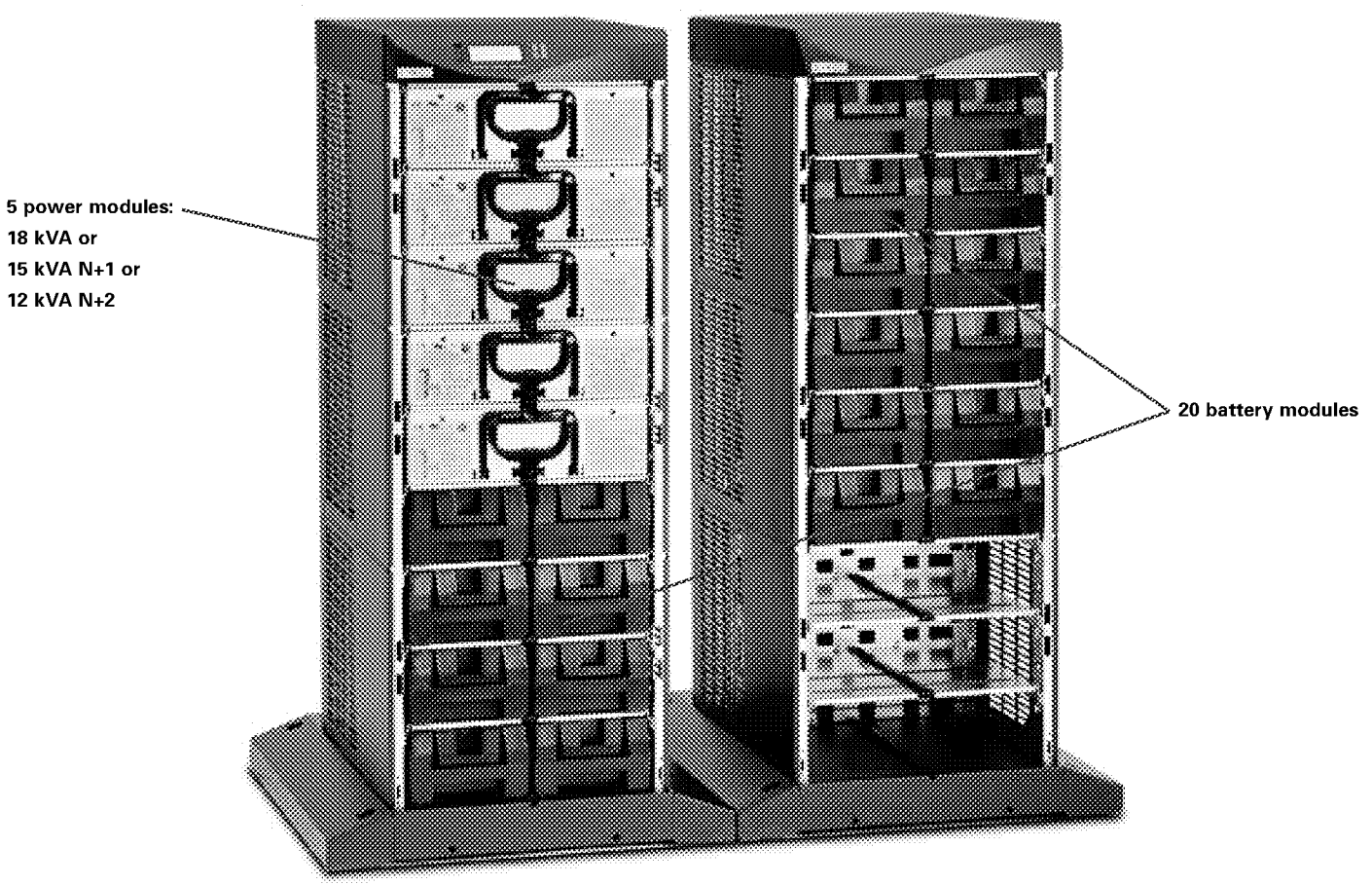
As business moves from a "bricks and mortar" model to "clicks and mortar," the need for system availability at all levels of enterprise is rising exponentially. From servers to routers to telecommunication installations, the interdependence of the technological components of the wired world can make systems vulnerable to downtime. Many precautions and preventive measures are taken when designing the network, including power protection.

In this shifting world, however, it's becoming more evident that simple power protection isn't enough. A new level of reliability is needed, one with redundancy, and thereby system availability. Today users can opt for an even greater degree of redundancy, with N+1, N+2, N+3, etc. However, this level of redundancy can quickly become cost prohibitive if the user is creating redundant systems with a single-module UPS. The 9170+ overcomes this potential obstacle with its modular design. Redundancy comes from the 3 kVA power modules plugged into the system. For example, if you have a 9 kVA solution, and are looking for N+2 redundancy, you only need a 15 kVA UPS (five power modules) with the 9170+, instead of 18 kVA. That's because the five UPS modules run in parallel within the system, giving you N+2 redundancy, without the additional cost and space requirements.

The 9170+ eliminates a system-level single point-of-failure. Because both the logic and power are housed in the module and not in the enclosure, there is a redundancy for the entire UPS. This is a critical distinction when looking for multiple levels of redundancy in the UPS, as there is inherent vulnerability in a UPS that limits redundancy in any part of the system.

Sample configuration

With a variety cabinet sizes and a user-friendly design you can configure the scalable and redundant 9170+ with 3 kVA power modules and battery modules to grow with your requirements.



PRE-CONFIGURED SYSTEMS WITH HARDWIRE INPUT AND OUTPUT

MODEL NUMBER		POWER RATING	INPUT CONNECTION	OUTPUT CONNECTIONS	DIMENSIONS H X W X D (IN/CM)	WEIGHT (LB/KG)
PW3S3K includes:	(1) 3-slot enclosure (1) power module (2) battery modules (1) caster kit	3 kVA expandable to 3 kVA N+1	Hardwired	Hardwired	19.5 x 17.0 x 25.5/ 49.5 x 43.0 x 65.0	155.0/69.9
PW6S3K includes:	(1) 6-slot enclosure (1) power module (2) battery modules (1) caster kit	3 kVA expandable to 9 kVA N+X	Hardwired	Hardwired	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	155.0/69.9
PW6S6K includes:	(1) 6-slot enclosure (2) power modules (4) battery modules (1) caster kit	6 kVA expandable to 9 kVA N+X	Hardwired	Hardwired	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	232.0/104.8
PW6S9K includes:	(1) 6-slot enclosure (3) power modules (6) battery modules (1) caster kit	9 kVA expandable to 9 kVA N+X	Hardwired	Hardwired	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	346.0/156.7
PW9S9K includes:	(1) 9-slot enclosure (3) power modules (6) battery modules	9 kVA expandable to 18 kVA N+X	Hardwired	Hardwired	47.0 x 24.0 x 28.5/ 119.5 x 61.0 x 72.5	389.0/176.7
PW12S9K includes:	(1) 12-slot enclosure (3) power modules (6) battery modules	9 kVA expandable to 18 kVA N+X	Hardwired	Hardwired	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	427.0/193.7
PW12S12K includes:	(1) 12-slot enclosure (4) power modules (8) battery modules	12 kVA expandable to 18 kVA N+X	Hardwired	Hardwired	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	504.0/228.6
PW12S15K includes:	(1) 12-slot enclosure (5) power modules (10) battery modules	15 kVA expandable to 18 kVA N+X	Hardwired	Hardwired	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	581.0/263.5
PW12S18K includes:	(1) 12-slot enclosure (6) power modules (12) battery modules	18 kVA expandable to 18 kVA N+X	Hardwired	Hardwired	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	658.0/298.4
Pre-configured systems with hardwire input and receptacles output options						
PW6S3K-PD includes:	(1) 6-slot enclosure (1) power module (2) battery modules (1) caster kit	3 kVA expandable to 9 kVA N+X	Hardwired	(2) L14-30R, (2) L6-30R, (12) 5-20R	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	192.0/86.9
PW6S6K-PD includes:	(1) 6-slot enclosure (2) power modules (4) battery modules (1) caster kit	6 kVA expandable to 9 kVA N+X	Hardwired	(2) L14-30R, (2) L6-30R, (12) 5-20R	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	269.0/121.8
PW6S9K-PD includes:	(1) 6-slot enclosure (3) power modules (6) battery modules (1) caster kit	9 kVA expandable to 9 kVA N+X	Hardwired	(2) L14-30R, (2) L6-30R, (12) 5-20R	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	346.0/160.7
PW9S9K-PD includes:	(1) 9-slot enclosure (3) power modules (6) battery modules	9 kVA expandable to 18 kVA N+X	Hardwired	(2) L14-30R, (2) L6-30R, (12) 5-20R	47.0 x 24.0 x 28.5/ 119.5 x 61.0 x 72.5	389.0/176.7
PW12S9K-PD includes:	(1) 12-slot enclosure (3) power modules (6) battery modules	9 kVA expandable to 18 kVA N+X	Hardwired	(3) L14-30R, (3) L6-30R, (12) 5-20R	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	427.0/193.7
PW12S12K-PD includes:	(1) 12-slot enclosure (4) power modules (8) battery modules	12 kVA expandable to 18 kVA N+X	Hardwired	(3) L14-30R, (3) L6-30R, (12) 5-20R	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	504.0/228.6
PW12S15K-PD includes:	(1) 12-slot enclosure (5) power modules (10) battery modules	15 kVA expandable to 18 kVA N+X	Hardwired	(3) L14-30R, (3) L6-30R, (12) 5-20R	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	581.0/263.5
PW12S18K-PD includes:	(1) 12-slot enclosure (6) power modules (12) battery modules	18 kVA expandable to 18 kVA N+X	Hardwired	(3) L14-30R, (3) L6-30R, (12) 5-20R	60.7 x 24.0 x 28.5/ 154.5 x 61.0 x 28.5	658.0/298.4
Pre-configured systems with line cord input and receptacles output options						
PW3S3K-LPD includes:	(1) 3-slot enclosure (1) power module (2) battery modules	3 kVA expandable to 3 kVA N+1	L14-30P	(1) L14-30R, (1) L6-30R, (4) 5-20R	19.5 x 17.0 x 25.5/ 49.5 x 43.0 x 65.0	155.0/69.9
PW6S3K-LPD includes:	(1) 6-slot enclosure (1) power module (2) battery modules	3 kVA expandable to 6 kVA N+1	14-50P	(2) L14-30R, (2) L6-30R, (12) 5-20R	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	192.0/86.9
PW6S6K-LPD includes:	(1) 6-slot enclosure (2) power modules (4) battery modules	6 kVA expandable to 6 kVA N+1	14-50P	(2) L14-30R, (2) L6-30R, (12) 5-20R	33.3 x 17.0 x 25.5/ 84.5 x 43.0 x 65.0	269.0/121.8

Notes: 50/60 Hz automatic frequency selection. Input/Output voltages 208–240V or 100/200,120/208, 127/220, 110/220 and 120/240V. Split phase power module offers both high and low output voltage. Universal power module offers only high output voltage. All 3- and 6-slot enclosure dimensions include caster kit.

UPS CABINET ENCLOSURES WITH HARDWIRE INPUT AND OUTPUT CONNECTIONS					
PW9170+ 3-slot	3 kVA	Hardwired	Hardwired	17.8 x 17.0 x 25.5/ 45.0 x 43.0 x 65.0	66.0/30.0
PW9170+ 6-slot	3 to 9 kVA	Hardwired	Hardwired	31.5 x 17.0 x 25.0/ 80.0 x 43.0 x 65.0	103.0/47.0
PW9170+ 9-slot	3 to 18 kVA	Hardwired	Hardwired	47.0 x 24.0 x 28.5/ 119.5 x 61.0 x 72.5	158.0/72.0
Rack Mount	3 to 18kVA	Hardwired	Hardwired	47.0 x 17.0 x 28.5/ 119.5 x 43.0 x 72.5	110.0/50.0
PW9170+ 12-slot	3 to 18 kVA	Hardwired	Hardwired	60.8 x 24.0 x 28.5/ 154.0 x 61.0 x 72.5	196.0/89.0
Rack Mount	3 to 18 kVA	Hardwired	Hardwired	60.8 x 17.0 x 28.5/ 154.0 x 43.0 x 72.5	148.0/67.0
Battery cabinet enclosures					
6-slot battery cabinet	-	DC interconnect option ASY-0525 required	-	31.5 x 17.0 x 25.0/ 80.0 x 43.0 x 65.0	93.0/42.2
9-slot battery cabinet	-	DC interconnect option ASY-0525 required	-	47.0 x 24.0 x 28.5/ 119.5 x 61.0 x 72.5	148.0/67.1
12-slot battery cabinet	-	DC interconnect option ASY-0525 required	-	60.8 x 24.0 x 28.5/ 154.0 x 61.0 x 72.5	186.0/84.4
Rack Mount	-	-	-	60.8 x 17.0 x 28.5/ 154.0 x 43.0 x 72.5	138.0/62.6
Available modules					
Split-phase power module	3 kVA/2.5 kW	-	-	4.2 x 14.1 x 15.3/ 10.6 x 35.8 x 38.9	17.0/7.7
Universal-phase power module	3 kVA/2.1 kW	-	-	4.2 x 14.1 x 15.3/ 10.6 x 35.8 x 38.9	17.0/7.7
Battery module	-	-	-	4.2 x 7.0 x 14.8/ 10.6 x 17.8 x 37.6	30.0/13.6
20 Amp charger module	3 kVA	-	-	4.2 x 14.1 x 15.3/ 10.6 x 35.8 x 38.9	17.0/7.7

Technical specifications[1]

ELECTRICAL INPUT

Voltage	208–240V or 200/100, 208/120, 220/110, 240/120 Vac
Voltage range	176–276V
Input power factor	.98
Frequency	50/60 Hz (±3 Hz)

ELECTRICAL OUTPUT

On utility voltage regulation	±3% of nominal
On battery voltage regulation	±3% of nominal
Efficiency mode	88% normal operation; 97% power saver (optional programmable)
Frequency regulation	±3 Hz online; ±0.1 Hz on battery

COMMUNICATIONS

LCD	4 x 20 character backlit display, programmable
Language support	English, French, Spanish and German
Communication ports	RS-232 (DB-9)
Communication slots	Two slots (standard)
SNMP capability	Web/SNMP enabled card options
Contact closures	Relay card option
Emergency power off (EPO) general	Input for external EPO

GENERAL

Topology	True double-conversion online
Diagnostics	Full system self-test on power up
UPS bypass	Automatic on overload or UPS failure
Dimensions & weights	See Pre-configured systems table

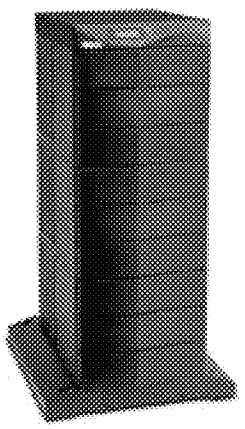
ENVIRONMENTAL AND SAFETY

Safety markings	UL, cUL
EMC markings	FCC class A
Surge suppression	IEEE/ANSI C62.41
Audible noise	<50 dBA
Ambient operating/ storage temperature	0 to 40°C (32 to 104°F)/ -20 to 40°C (60°C without battery) -4 to 104°F (140°F without battery)
Relative humidity	5% to 95%, non-condensing
REPO port	Meets NEC code 645-11 intent and UL requirements

BATTERY

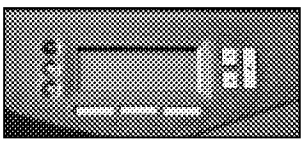
Internal battery type	Sealed, lead-acid; maintenance free
Battery runtime	See Battery Runtimes on back page
Battery replacement	Hot-swappable
Recharge time	<4 hours standard

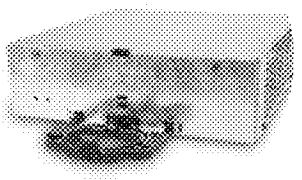
1. Due to continuing product improvement programs, specifications are subject to change without notice.



9170+ 9-slot configuration

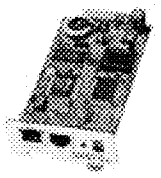
LCD panel

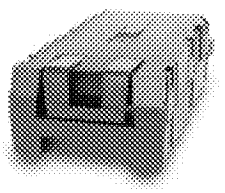




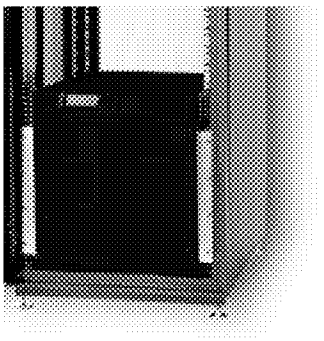
3 kVA power or charger module (one per slot)

Communication cards





Battery module (two per slot)



Maximum performance

- The lowest overall cost of ownership is a direct result of the low initial investment, higher operating efficiencies and programmable high efficiency
- A UPS solution that is as easy to install and operate as a PC —universal components fit in any order in any slot without affecting the operation of the system or its protection of the critical load
- Featuring user-friendly LCD and two internal communication slots, which accept a wide variety of connectivity devices and the new ConnectUPS Web/SNMP card
- Lightweight, high-performance power and battery modules weigh under 30 pounds for easy service and hot-swapping

Maximum reliability

- N+X power and logic redundancy eliminates single point-of-failure, providing highest reliability and availability
- Redundant modularity virtually eliminates downtime and enhances serviceability
- ABM technology significantly increases battery service life

Maximum availability

- Double-conversion online technology is universally recognized as providing the highest availability in an internet-centric global marketplace
- Provides protection against all nine common power problems

Maximum service plans

- Eaton Gold Plan Plus: Enhance and extend your standard UPS warranty with added assurance of knowing your UPS is installed and operating properly from the start
- Comprehensive coverage for the entire UPS
- On-site startup by authorized Eaton product representative
- Replacement UPS or module delivered to your location
- Original UPS or module picked up from your location
- Please call for details

Maximum flexibility

- Modular design delivers scalable, flexible solutions to constantly changing equipment requirements
- Easily expanded by installing additional power, charger or battery modules to support additional critical applications and devices
- Internal options: line cord, receptacles, communications
- External options: rackmount kit, casters (standard on 9- and 12-slot enclosures), extended runtime battery cabinets (housing up to 8 hours of additional runtime), wall-mounted maintenance bypass cabinets

Rackmount configurations

Adding yet another level of flexibility to the unique design of the 9170+ is the ability to configure it into a rackmount solution. Imagine all the standard benefits of the 9170+ installed in a standard 19-inch computer rack with return brackets.

9170+ Runtime charts

RUNTIME CHART IN MINUTES (FULL LOAD/HALF LOAD) SPLIT-PHASE MODULE ASY-0673 Load (VA) number of strings (two battery modules per string)

	1 String	2 String	3 String	4 String	5 String	6 String	7 String	8 String	9 String	10 String	11 String	12 String
3 kVA	6.5/16	16/40	27.5/67.5	40/98	53.5/132	67.5/167	83/204	98/242	115/283	132/324	149/365	167/408
6 kVA		6.5/16	11/27.5	16/40	21.5/53.5	27.5/68	33.5/83	40/98	46.5/115	53.5/132	60.5/149	67.5/167
9 kVA			6.5/16	9.5/23.5	13/31.5	16/40	20/49	23.5/58	27.5/67.5	31.5/78	35.5/88	40/98
12 kVA				6.5/16	9/21.5	11/27.5	13.5/33.5	16/40	19/46.5	21.5/53.5	24.5/60.5	27.5/68
15 kVA					6.5/16	8/20.5	10/25	12/30	14/35	16/40	18.5/45	20.5/50.5
18 kVA						6.5/16	8/20	9.5/23.5	11/27.5	12.5/30	14.5/35.5	16/40

system is deployed.

	13 String	14 String	15 String	16 String	17 String	18 String	19 String	20 String	21 String	22 String	23 String	24 String
3 kVA	185/456	204/501	223/549	242/595	262/640	283/692	302/750	323/790	345/850	365/900	387/955	408/1015
6 kVA	75/185	83/204	90/223	98/242	106/262	115/285	123/302	132/324	140/345	149/365	157/388	167/408
9 kVA	44/109	49/120	53.5/132	58/143	63/154	68/167	73/179	78/191	83/204	88/210	93/229	98/242
12 kVA	30.5/75	33.5/83	37/90	40/98	43/106	46.5/115	50/123	53.5/132	57/140	60/149	64/157	68/167
15 kVA	23/56	25/62	27.5/67.5	30/73.5	32.5/79.5	35/86	37.5/92	40/98	42.5/105	45/111	48/118	51/124
18 kVA	18/44	20/49	21.5/53.5	23.5/58	25.5/63	27.5/68	29.5/73	31.5/78	33.5/83	35.5/88	38/93	40/98

RUNTIME CHART IN MINUTES (FULL LOAD/HALF LOAD) UNIVERSAL MODULE ASY-0674 Load (VA) number of strings (two battery modules per string)

	1 String	2 String	3 String	4 String	5 String	6 String	7 String	8 String	9 String	10 String	11 String	12 String
3 kVA	8/24	24/59	43/95	58/140	80/175	95/215	119/240	135/290	155/335	65/365	200/395	215/450
6 kVA		8/24	16/40	24/59	32/83	40/103	49/114	58/140	69/156	83/175	90/190	103/205
9 kVA			8/24	13/35	18/46	24/59	29/63	35/86	40/103	46/115	54/125	58/140
12 kVA				8/24	13/33	16/40	19.5/43.5	24/59	29/70	33/80	36/90	41/100
15 kVA					8/24	11.5/31	14.5/31.5	18/46	20.5/51	24/58	28/66	31/73
18 kVA						8/24	11/31.5	13/36	15.5/41	18/45	20.5/51	24/58

	13 String	14 String	15 String	16 String	17 String	18 String	19 String	20 String	21 String	22 String	23 String	24 String
3 kVA	225/500	245/540	270/600	290/620	315/650	335/690	350/720	365/780	375/850	395/890	425/920	450/950
6 kVA	113/335	123/255	135/273	143/290	148/315	156/333	165/350	175/365	183/385	190/395	198/420	205/440
9 kVA	63/150	73/165	80/178	86/190	93/200	100/210	107/225	115/240	121/255	125/270	135/280	143/290
12 kVA	47/110	52/121	56/130	58/140	65/147	70/156	75/165	80/175	85/185	90/195	95/205	100/215
15 kVA	34/83	38/94	41.5/103	44.5/113	46.5/117	51/127	56/130	58/140	61/149	66/158	71/165	73/170
18 kVA	27/65	31.5/72	34.5/77	36/83	38/94	41/100	44/105	45/115	48/122	54/131	57/137	58/140

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Andean & Caribbean:
1.949.452.9610
Mexico & Central America:
52.55.9000.5252

EUROPE/MIDDLE EAST/AFRICA
Denmark: 45.3686.7910
Finland: 358.94.52.661
France: 33.1.6012.7400
Germany: 49.0.7841.604.0
Italy: 39.02.66.04.05.40
Norway: 47.23.03.65.50
Portugal: 55.11.3616.8500
Sweden: 46.8.598.940.00
United Kingdom: 44.1753.608.700

ASIA PACIFIC
Australia: 61.2.9693.9366
New Zealand: 64.0.3.343.3314
China: 86.21.6361.5599
HK/Korea/Taiwan: 852.2745.6682
India: 91.11.4223.2300
Singapore/SEA: 65.6825.1668